

Mineral Industry Surveys

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MANUFACTURED ABRASIVES IN THE THIRD QUARTER 2005

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives through its survey of producers. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. Where indicated, Canadian and United States data are combined to protect proprietary information. Except where noted, the quantities cited in this report are in metric units. All unit value calculations in this report are based on unrounded data.

Fused Aluminum Oxide

The total production during the third quarter of 2005 was estimated to be 5,000 metric tons of regular-grade crude fused aluminum oxide with an estimated value of \$1.5 million. Only one company, which operates one plant in Canada, produced fused aluminum oxide. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

According to the U.S. Census Bureau, U.S. imports of crude fused aluminum oxide for 2005 through the month of August were 184,000 tons valued at \$56.7 million, or an average of \$308 per ton. About 86% of the imports came from China, 9% from Venezuela, 4% from Canada, and 1% from other countries. Imports of crude fused aluminum oxide from China may not all be abrasive-quality material.

There were no reported U.S. imports of refined and ground fused aluminum oxide for 2005 through the month of August.

U.S. exports of fused aluminum oxide for 2005 through the month of August were 9,880 tons. The exports were valued at \$33.2 million, or \$3,370 per ton. Germany received 34% of the exports that were shipped; Canada 23%, Mexico 15%, Japan 12%, Republic of Korea 4%, and others 12%.

The Department of Defense stores fused aluminum oxide in the National Defense Stockpile (NDS), but all of the NDS aluminum oxide has been authorized by law for disposal. During the third quarter of 2005, the Department of Defense held two sales of fused aluminum oxide abrasive grain. The combined sales totaled 2,064 mt with a value of \$871,000. NDS reported that 6,224 tons of fused aluminum oxide abrasive grain with an estimated value of \$2.2 million remained in the stockpile. The NDS has sold all of the crude fused aluminum

oxide in the stockpile (Janet Rollins, Defense National Stockpile Center, oral commun., November 2, 2005). No further stockpiling of crude fused aluminum oxide by the Department of Defense is anticipated. If the current authorized disposal rate and NDS sales schedules are continued, all of the stockpiled fused aluminum oxide abrasive grain could be sold by the end of 2006.

Silicon Carbide

Abrasive-grade silicon carbide is produced by one company in the United States. The total production during the third quarter of 2005 was estimated to be 10,000 tons of abrasive-grade silicon carbide with an estimated value of \$4.9 million. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

Total U.S. imports of crude silicon carbide for 2005 through the month of August were 99,600 tons valued at \$50.1 million; imports from China alone were 80,400 tons valued at \$42.8 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$379 per ton; the average price of Chinese crude was \$532 per ton. U.S. imports of refined and ground silicon carbide for the same period were 33,300 tons valued at \$38.9 million, or an average of \$1,166 per ton. During the period, China accounted for 81% of the crude material and 33% of the refined and ground material.

U.S. exports of crude silicon carbide for 2005 through the month of August were reported to be 2,670 tons with a value of \$4.34 million. Exports of refined and ground silicon carbide were 5,500 tons valued at \$5.58 million. About 88% of the crude material was shipped to, in decreasing order, Norway, Mexico, and Japan. About 94% of the refined material went to, in decreasing order, Canada, Mexico, and the United Kingdom.

The NDS has sold all of the silicon carbide in the stockpile. No further stockpiling is anticipated.

Metallic Abrasives

Metallic abrasives information was collected from 12 companies operating 13 U.S. plants. During the third quarter of 2005, four companies produced 52,500 tons of steel shot and grit, an increase of 3%, compared with the same period in 2004.

At least one of the companies produced shot and grit from reclaimed material. Total third quarter production was valued at \$23.8 million, or an average of \$453 per ton. Total annual production in 2004 was 193,000 tons valued at \$87.8 million; 2003 production was 192,000 tons valued at \$86.2 million; 2002 production was 201,000 tons valued at \$91 million.

Shipments of steel shot and grit in the third quarter of 2005 were 57,000 tons valued at \$27.3 million, or an average of \$479 per ton, compared with shipments during the third quarter of 2004, which were 48,900 tons valued at \$22.3 million for an average of \$457 per ton.

During the third quarter seven companies produced 539 tons other types of metallic shot and grit (primarily cut wire shot) valued at \$1.83 million.

Imports of all types of metallic shot and grit for 2005 through the month of August were 10,700 tons valued at \$8.30 million for an average of \$777 per ton. Canada was the largest supplier, accounting for 65% of the tonnage imported.

Exports of all types of metallic abrasives for 2005 through the month of August were 17,300 tons valued at \$14.1 million, or an average of \$816 per ton. Shipments to Mexico accounted for 48% of the exports; an additional 42% was shipped to Canada.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2004				2005					
	Third quarter		Fourth quarter		First quarter		Second quarter		Third quarter	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
United States and Canada, production: ²										
Silicon carbide ³	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900
Crude aluminum oxide, regular-grade	5,000	1,500	5,000	1,500	5,000	1,500	5,000	1,500	5,000	1,500
United States, production:										
Steel shot and grit	50,900	23,200	46,600	21,300	53,100	24,300	51,000	23,400	52,500	23,800
Other shot and grit ^{e, 4}	406	1,360	297	1,070	451	1,460	609	2,230	539	1,830
Total	51,300	24,600	46,900	22,300	53,500	25,700	51,600	25,600	53,100	25,600
United States, shipments:										
Steel shot and grit	48,900	22,300	45,900	21,100	56,400	27,400	55,600	26,900	57,000	27,300
Other shot and grit ^{e, 4}	357	1,290	273	950	480	1,720	583	2,090	523	1,870
Total	49,300	23,600	46,200	22,000	56,900	29,200	56,200	29,000	57,500	29,200

^eEstimated.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Quantities are rounded to the nearest 5,000 tons to avoid disclosing proprietary data; values are estimated.

³Includes materials for metallurgical uses and other applications.

⁴Includes cut wire shot and reclaimed shot and grit from primary producers.